CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1. (Currently amended) A rate adaptive system for optical communication networks comprising:

a plurality of optical transceivers capable of transmitting and receiving optical signals at a plurality of rates to each other, and

an optical fibre linked to said optical transceivers, said system configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition responsive to an optical signal parameter by causing said optical transceivers to transmit and receive at a different rate, wherein ~~the error condition comprises one of a code word violation and an optical modulation amplitude~~ a rate of data being forwarded per unit time is adjusted by inserting invalid data which can be identified and ignored by a downstream process.

2. (Previously presented) The system of claim 1, wherein said error condition is a failure to synchronize a received signal.

3. (Previously presented) The system of claim 1, wherein said system is further configured to calculate an error coefficient based on said received signals, and said error condition comprise said error coefficient exceeding a predefined range.

4. (Previously presented) The system of claim 1, wherein said initial rate is lowered according to predefined percentages of said initial rate in response to said error condition.

5. (Previously presented) The system of claim 4, wherein said percentages are selected from the group of 75, 50 and or 25 percent of said initial rate.

6. (Previously presented) The system of claim 1, wherein said initial rate is 10 Gb/s.

7. (Previously presented) The system of claim 1, wherein said system is configured to operate in an optical Ethernet network.

8. (Previously presented) The system of claim 1, wherein said system is further configured to notify a network operator in the event of said error condition.

9. (Currently amended) A rate adaptive method for operating an optical communication network, comprising:

transmitting data at an initial rate,

receiving said data at said initial rate,

evaluating said data responsive to a parameter observed on an optical signal to determine if an error condition exists~~, wherein the error condition comprises one of a code word violation and an optical modulation amplitude~~, and

adapting said rate based upon said evaluation by transmitting and receiving at a different rate, wherein transmitting and receiving comprises inserting invalid data which can be identified and ignored by a downstream process.

10. (Previously presented) The method of claim 9, wherein adapting said rate comprises lowering said initial rate according to predefined percentages of said initial rate in response to said error condition.

11. (Previously presented) The method of claim 10, further comprising notifying a network operator in the event of said error condition.

12. (Currently amended) An optical transceiver module for a rate adaptive system for optical communication networks comprising

means for transmitting an optical signal via an optical fibre at a plurality of optical signal rates,

means for receiving an optical signal transmitted at said plurality of optical signal rates,

means for determining an error condition responsive to a parameter derived from observation of the optical signal~~, wherein the error condition comprises one of a code word violation and an optical modulation amplitude~~, and

means for adapting an optical signal transmission rate ~~based upon the error condition~~ by transmitting and receiving at a different rate, wherein transmitting and receiving comprises adjusting ratios in a phase-locked loop circuit.

13. (Currently amended) A rate adaptive method for operating an optical communication network, comprising:

transmitting test signals at an initial rate,

receiving said test signals at said initial rate,

evaluating said test signals to determine if an error condition exists~~, wherein the error condition comprises one of a code word violation and an optical modulation amplitude~~, and

adapting said rate based upon said ~~evaluation~~ evaluating by transmitting and receiving at a different rate, wherein transmitting and receiving comprises reducing the number of active channels in a multiple channel parallel interconnect.